REMARKS

Claims 1-20 are pending in the application. Claims 1 and 15 are the only independent claims.

Claims Rejections - 35 U.S.C. §§ 102 and 103

Claims 1 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,009,583 to Buckle.

Claims 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,009,583 to Buckle in view of European Patent Application Publication No. 1136351 A2 (Garofalo).

Claims 3, 4 11-14 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Buckle in view of Garofalo and further in view of U.S. Patent No. 6,217,257 to Garofalo et al.

Claims 16 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Buckle in view of Garofalo et al.

The Examiner has indicated that claims 5-10 and 18-20 would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims.

Independent Claim 15 Applicants respectfully traverse the rejection of claim 15 as being obvious over Buckle. The Examiner maintains that all of the elements of claim 15 except for the expandable feature of the air chamber are present in the buoyancy compensator of Buckle. Applicants respectfully assert that the buoyancy compensator of Buckle does not have the structure recited in claim 15 and cannot perform the functions of applicant's buoyancy compensator.

Applicant's buoyancy compensator enables a release of air from the air chamber regardless of the position of the user. In contrast, the buoyancy compensator of Buckle does not

enable air release in several diver orientations, for instance, when the diver is head down or oriented on his or her side.

A buoyancy compensator device pursuant to claim 15 comprises an expandable air chamber, a manifold, and a control valve. The manifold extends to and communicating with at least two outlets, one of the outlets arranged in an upper region and one of the outlets arranged in a lower region of the expandable air chamber. The control valve is disposed between the expandable air chamber and the manifold, whereby an opening of the control valve enables gas to pass from the expandable air chamber into the manifold and from the manifold through at least one of the outlets. Which outlet depends on the orientation of the user.

The Examiner points to Figure 6 of the Buckle reference as showing a manifold purportedly connecting an air chamber (8) to an upper outlet and a lower outlet (8b and 18). The Examiner however does not cite a reference numeral for the purported manifold. Applicants respectfully maintain that the reason for this omission is that there is no such manifold disclosed by Buckle.

According to applicants' claim 15, a valve connects the air chamber to a manifold, which in turn extends to upper and lower outlets. In Figure 6 of the Buckle reference, valves 19 are disposed ***between the outlet valves*** (18 and 8b) referred to by the Examiner, rather than between the air chamber (8) on the one side and the two outlet valves on the other side, as set forth in claim 15. Concomitantly, Buckle does not disclose a manifold connecting the air chamber (8) and a valve on the one side (an upstream side) to the two outputs (18 and 8b) on the other side (a downstream side), as set forth in claim 15. Rather, Buckle discloses a conduit or fluid-flow line (22) that extends from the air chamber (8, 16) and the valves (19) to ***one outlet (8b) only***. That conduit or line (22) is not a manifold, since a manifold by definition must extend to multiple outlets.

To the extent that the flow conduit or line (22) of Buckle is viewed as a manifold extending to multiple outlets (8b and 25) those outlets are not disposed one in an upper region and the other in a lower region of the air chamber. Instead, both outlets (8b and 25) are disposed at the same location (at control unit 4).

The buoyancy compensator of Buckle does not and cannot function in the manner of applicants' buoyancy compensator. Applicants' buoyancy compensator addresses and solves the problem of allowing air to escape the air chamber in whatever position the diver may be. The manifold of applicants' claim 15 extends to multiple outlets disposed in vastly different positions relative to the air chamber. In a simplest embodiment pursuant to applicants' claim 15, there is one outlet in an upper region and another outlet in a lower region of the air chamber. Applicants' invention as set forth in claim 15 allows for additional outlets in other regions of the air chamber. All of the outlets are connected to the air chamber by the manifold and the valve so that the air chamber that is at the highest level allows air to escape to reduce buoyancy.

It is apparent that the device of Buckle could not be modified in order to provide discharge valves in all positions or on all side of the air chamber. The discharge valves of Buckle cannot be simply moved and multiplied without substantially altering the construction of the device.

Garofalo discloses a watertight diving suit, which is very different from a buoyancy control device. The watertight diving suit of Garofalo operates with a valve system similar to that of Garofalo et al. (US Patent No. 6,217,257 and EP-09921064), which is discussed in the Background section of applicants' disclosure. In Garofalo and Garofalo et al., the discharge valves are power driven by compressed air. To that end, respective conduits extend to the valves. When a diver wishes to discharge air, all of the valves are opened and air is discharged through the valve proximate to the air pocket.

In the present invention as set forth in claim 15, there is a discharge valve upstream of all of the outlets. The discharge valve is connected to all of the outlets by a manifold so that when the discharge valve is opened, the manifold guides air from the air chamber to whatever outlet is positioned at the highest level.

In the buoyancy compensator of Buckle, there is no valve that is upstream of all of the outlets, and in particular upstream of outlets both in an upper region and a lower region of the air chamber. The Buckle buoyancy compensator has no manifold that extends from a discharge valve to outlets both in an upper region and a lower region of the air chamber.

Similarly, in the diving suit of Garofalo there is no valve that is upstream of all of the outlets, and in particular upstream of outlets both in an upper region and a lower region of the device. The Garofalo diving suit has no manifold that extends from a discharge valve to outlets both in an upper region and a lower region of the diving suit.

While Garofalo discloses a manifold, the manifold (6) of Garofalo does not communicate with the outlets controlled by the valves (3, 4, 5). Instead, the manifold extends to the valves for controlling the open or closed status thereof. Air from the Garofalo diving suit does not pass through the manifold (6) and then through the outlets controlled by the valves. Instead, the air in the diving suit passes directly through the valves (3, 4, 5) upon an opening thereof in response to a pressure transmitted via the manifold.

The secondary references relied on by the Examiner do not provide any teachings that would make it obvious to one of ordinary skill in the art to modify the Buckle compensator to arrive at applicants' device as set forth in independent claim 15.

Independent Claim 1 Fort he same reasons discussed above, applicant respectfully traverses the rejection of claim 1 as being unpatentable over Buckle. As set forth in applicant's claim 1, a buoyancy compensator device comprises an expandable air chamber and at least two

outlets, one arranged in an upper region and one arranged in a lower region, wherein ***a manifold connects the expandable air chamber to the outlets by means of a control valve.***

Niether Buckle nor any of the other references of record disclose a buoyancy compensator for divers that has a manifold connecting an air chamber to an upper outlet and a lower outlet by means of a control valve. In Buckle, a manifold connects only a lower outlet (8b) or possibly two lower outlets (8b, 25) to an air chamber (8) by means of a control valve (19). The upper valve (18) of Buckle communicates directly with the air chamber (16 being an extension of 8).

Again, applicants' invention provides an elegant solution to the problem of buoyancy compensator control by providing multiple outlets in different locations so that air can always escape regardless of the orientation of the user. This solution is enabled by providing a manifold connecting the air chamber to the multiple outlets by means of a control valve.

In view of the above remarks and observations, applicants request that the Examiner reconsider and with draw the rejections of the claims under § 103(a) of the Patent Statute.

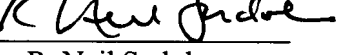
Conclusion

For the foregoing reasons, independent claims 1 and 15, as well as the claims dependent therefrom, are deemed to be in condition for allowance. An early Notice to that effect is earnestly solicited.

Should the Examiner believe that direct contact with applicant's attorney would advance the prosecution of this application, the Examiner is invited to telephone the undersigned at the number below.

Respectfully submitted,
COLEMAN SUDOL SAPONE, P.C.

Dated: 11 July 2007

By: 

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